

Figure 1

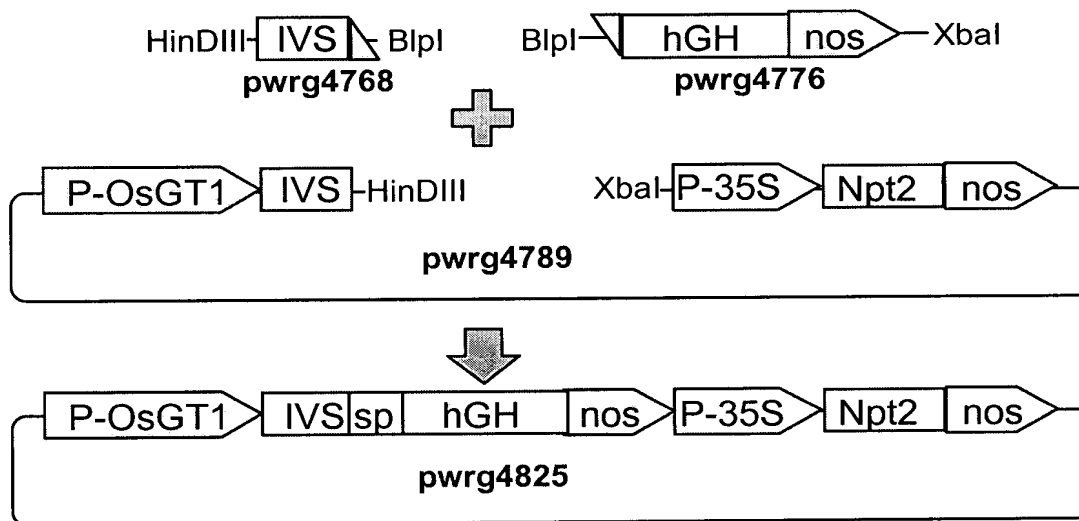


Figure 2

plasmid pwrg	promoter	5' UTR	intron	signal	coding region	terminator	selection
4738	35S	EXT	-	EXT	MAFPT	NOS	
4741	35S	EXT	-	EXT	MAFPT	NOS	kanamycin
4744	35S	DSSU	-	-	MAFPT	NOS	
4747	eFMV	petHSP70	-	CTP2	MAFPT	NOS	
4751	35S	EXT	ZmHSP70	EXT	MAFPT	NOS	
4757	e35S		ZmHSP70	CTP2	MAFPT	NOS	
4776	35S	EXT	-	EXT	FPT	NOS	
4803	35S	EXT	-	EXT	FPT	NOS	kanamycin
4805	35S	EXT	-	EXT	FPT	NOS	GUS
4809	7S	EXT	-	EXT	FPT	NOS	GUS
4825	OsGT1	GT1	ZmHSP70	EXT	FPT	NOS	kanamycin
4827	7S	EXT	-	EXT	FPT	NOS	glyphosate
4834	35S	DSSU	-	yeast ubiquitin	FPT	NOS	
4852	7S	EXT	-	EXT	FPT	NOS	glyphosate
4857	35S	potato ubiquitin	-	potato ubiquitin	FPT	NOS	
pmon 41324	e35S	soy HSP 17.9	-	soy oleosin	FPT	NOS	

Figure 3

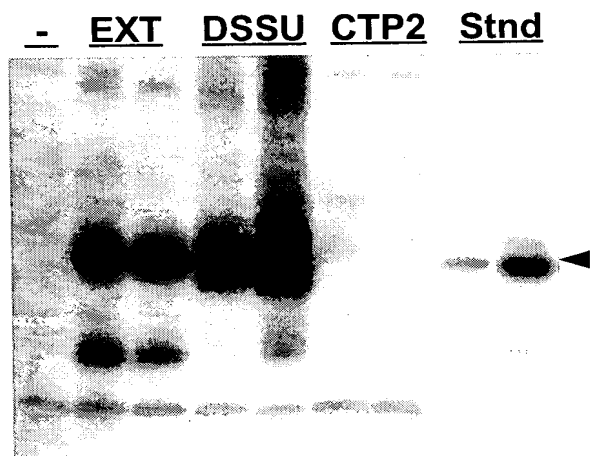


Figure 4

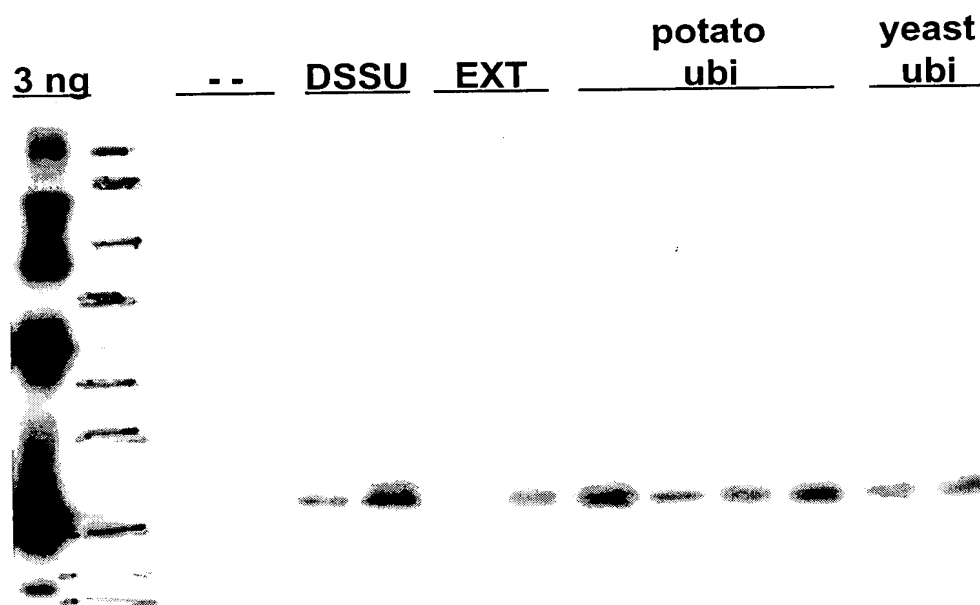


Figure 5



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Plasmid pWRG	promoter	method	marker	# plants	# marker <sup>+</sup>	# hGH <sup>+</sup>	%TSP
4805	P-35S	GUN	GUS	4	2/4	1/4	0.0008
4809	P-7S	GUN	GUS	9	3/9	0/9	nd
4827	P-7S	AGRO	CP4	10	8/10	3/10	low
4852	P-7S	GUN	CP4	34	26/34	0/34	nd

Figure 7

Figure 7: Transformation efficiency of various plasmids and promoters. The table shows the number of plants transformed, the number of marker-positive plants, the number of hGH-positive plants, and the percentage of TSP for each plasmid and promoter combination.



Plasmid pWRG	target	CALLI		SUSPENSION CELLS					
		# pos/ # tested	max %tsp	avg % tsp	# pos/ # tested	max cell %tsp	avg cell % tsp	max media mg/L	max media %tsp
4738	secrete	15/34	0.086	0.029	5/5	0.004	0.003	0.1	not tested
4741	secrete	25/32	not tested	not tested	14/18	0.104	0.04	0.7	0.4
4744	cytosol	36/40	0.1	0.023	9/10	0.275	0.05	not tested	not tested
4747	plastid	9/40	0.038	0.021	3/4	0.041	0.02	not tested	not tested
4803	secrete	34/45	1.21	0.024	19/20	0.688	0.14	0.7	0.5

Figure 9

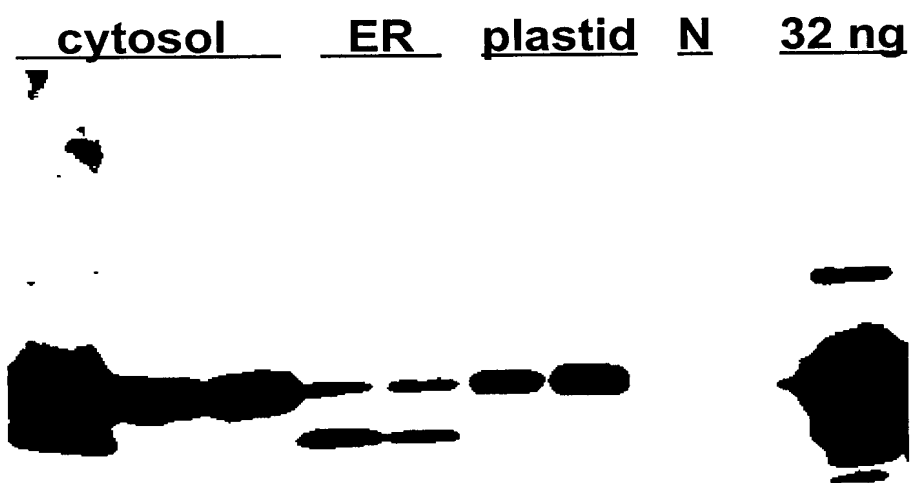


Figure 10



<b>pwrp</b>	<b>targeting</b>	<b># pos/ # tested</b>	<b>max %tsp</b>
4744	cytosol	9/23	0.125
4747	plastid	6/15	0.025
4776	secrete	2/4	0.008

Figure 11

Figure 11

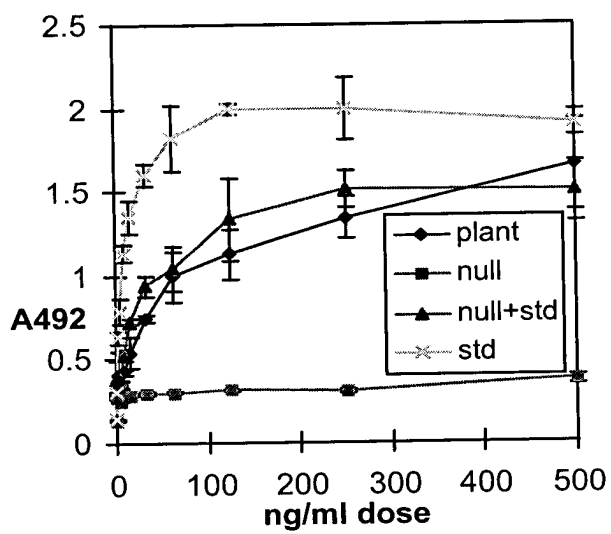


Figure 12

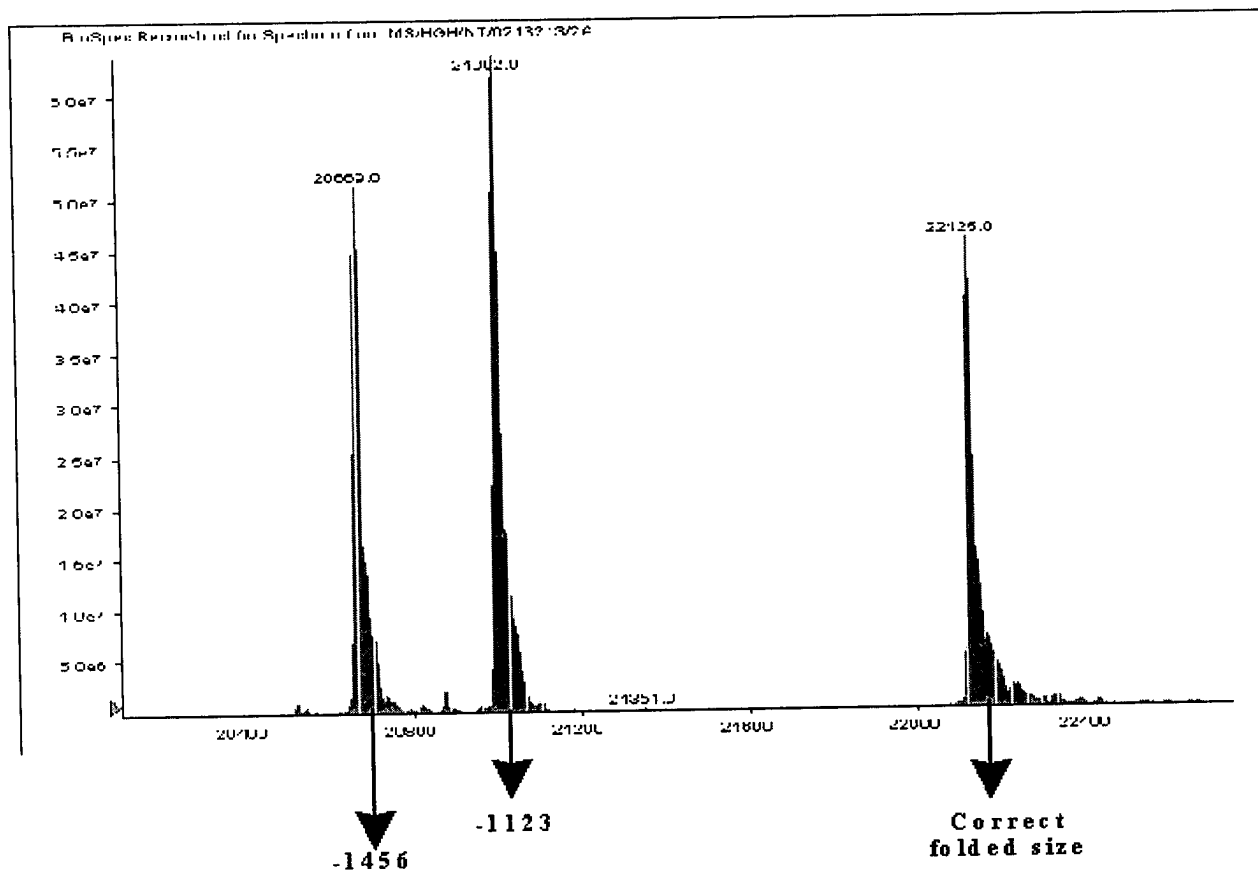


Figure 13

event Number	Ear Number	1 <sup>st</sup> generation			2 <sup>nd</sup> generation		
		cross	seed % tsp	± SD	ratio	seed % tsp	± SD
35	Q026764	self	2.86	0.77	17:2	5.0	1.4
35	Q026766	self	1.02	0.54	10:3	6.5	
59	Q026979XH99	outcross	2.09	0.003	14:14	3.3	
22	Q026750XH99	outcross	0.89	0.16	4:3	nd	
66	Q027042	self	1.30	0.22	72:21	5.8	2.5
27	Q026782*	self	1.9	0.67	6:0	2.2	
27	Q026783*	self	1.27	1.08	16:1	2.0	

Figure 14

0.5  
ng independent transgenic first generation seeds

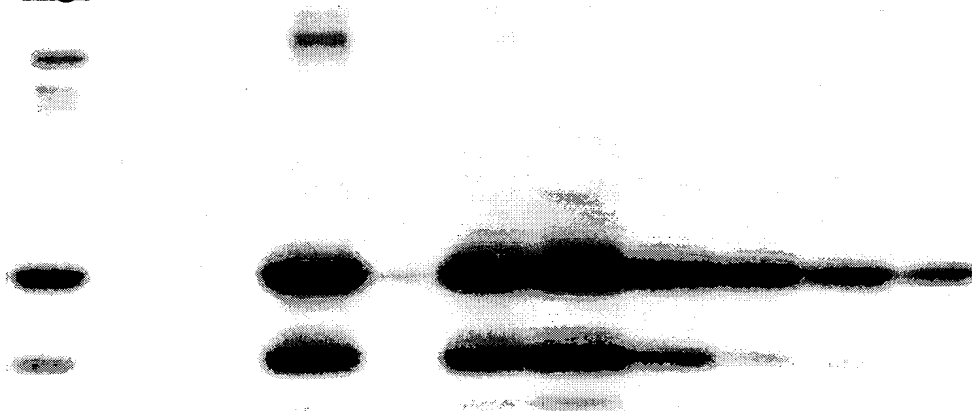


Figure 15

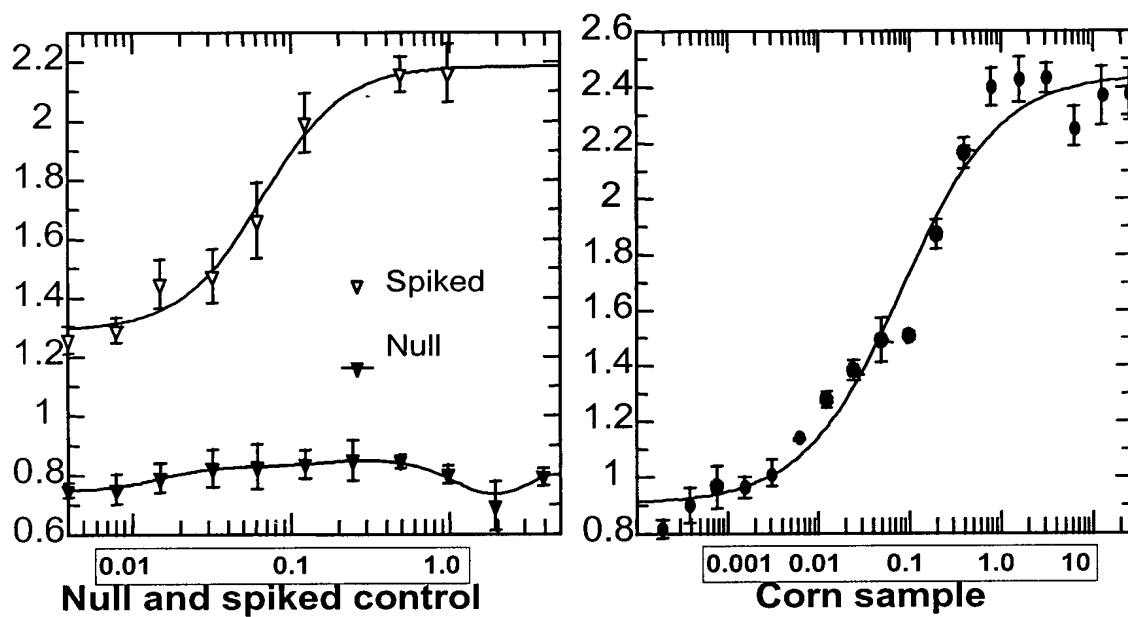


Figure 16

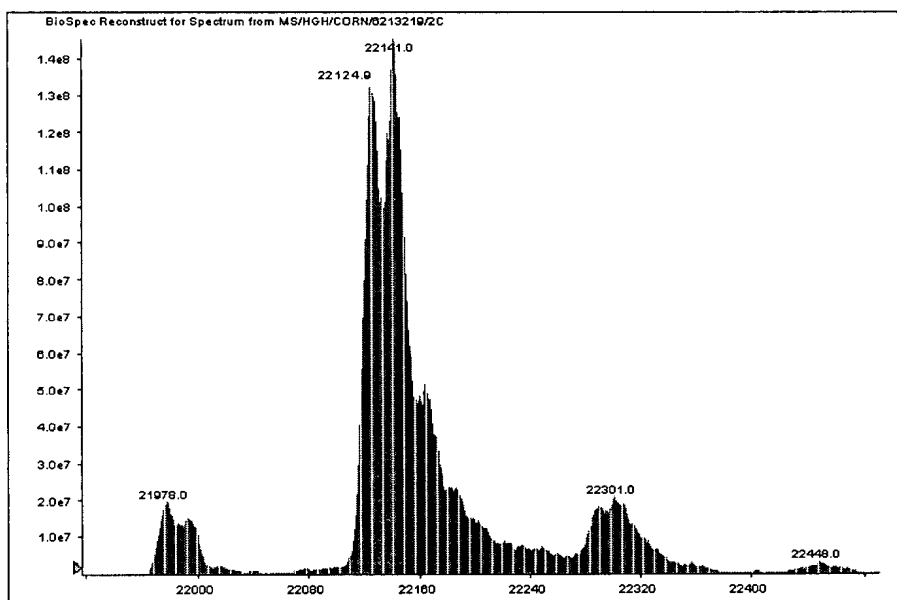


Figure 17A

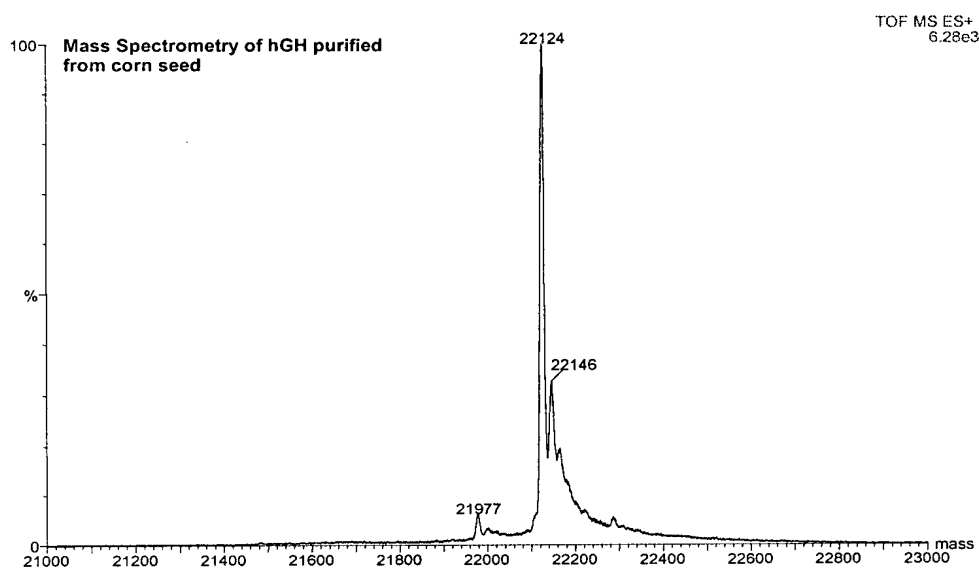


Figure 17B

Downloaded from www.sciencedirect.com

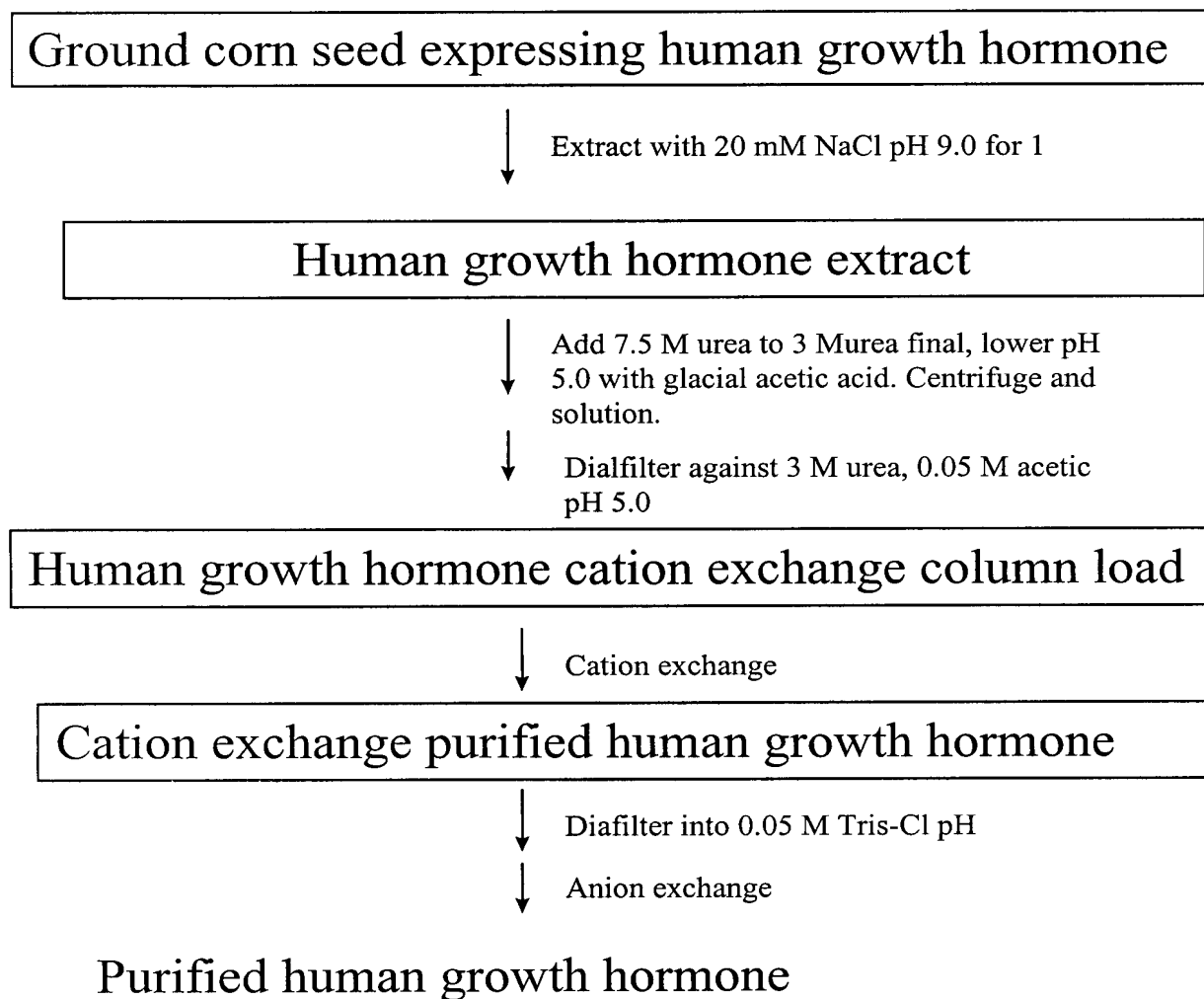


Figure 18

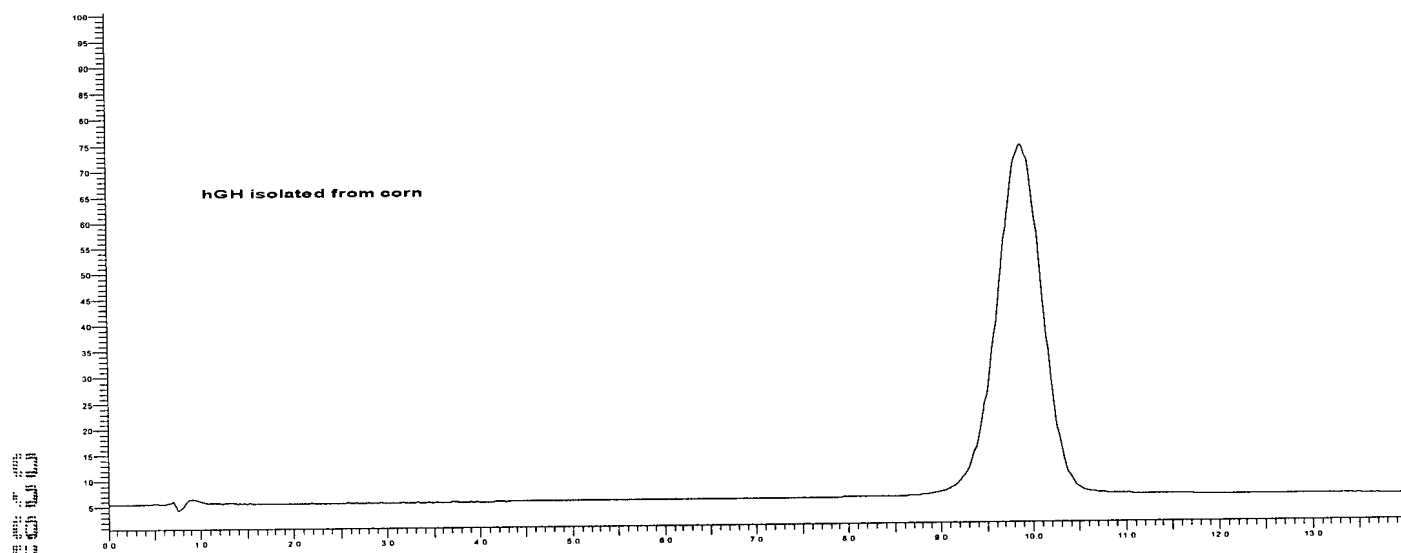


Figure 19A

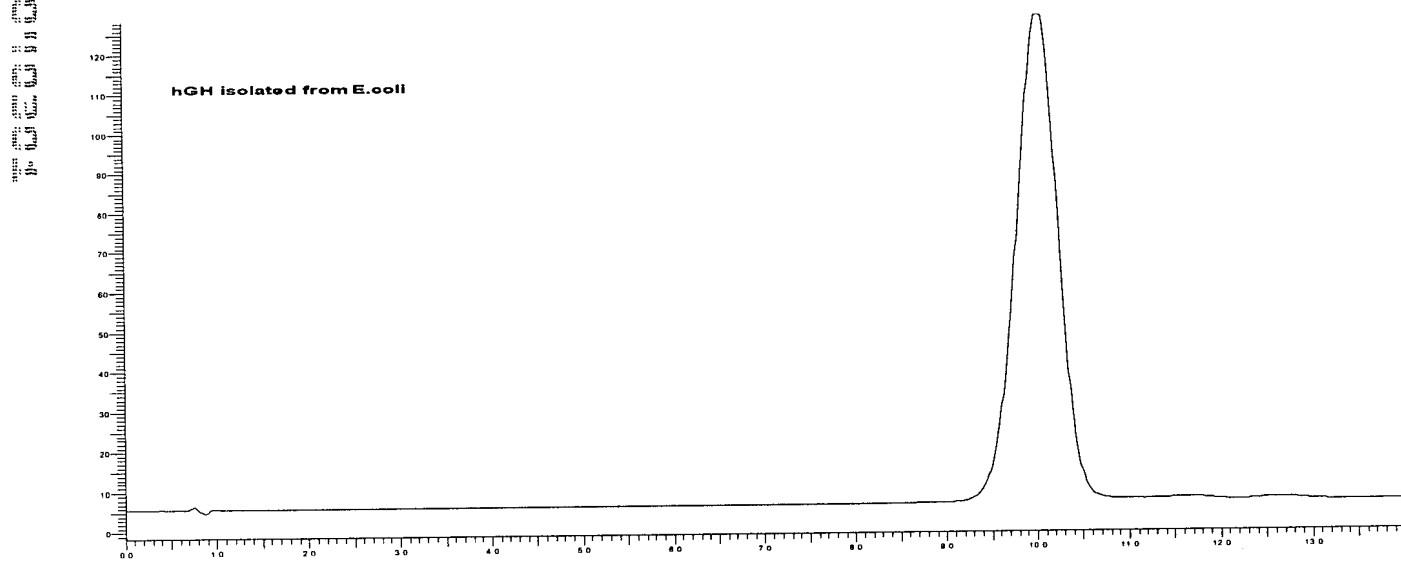


Figure 19B



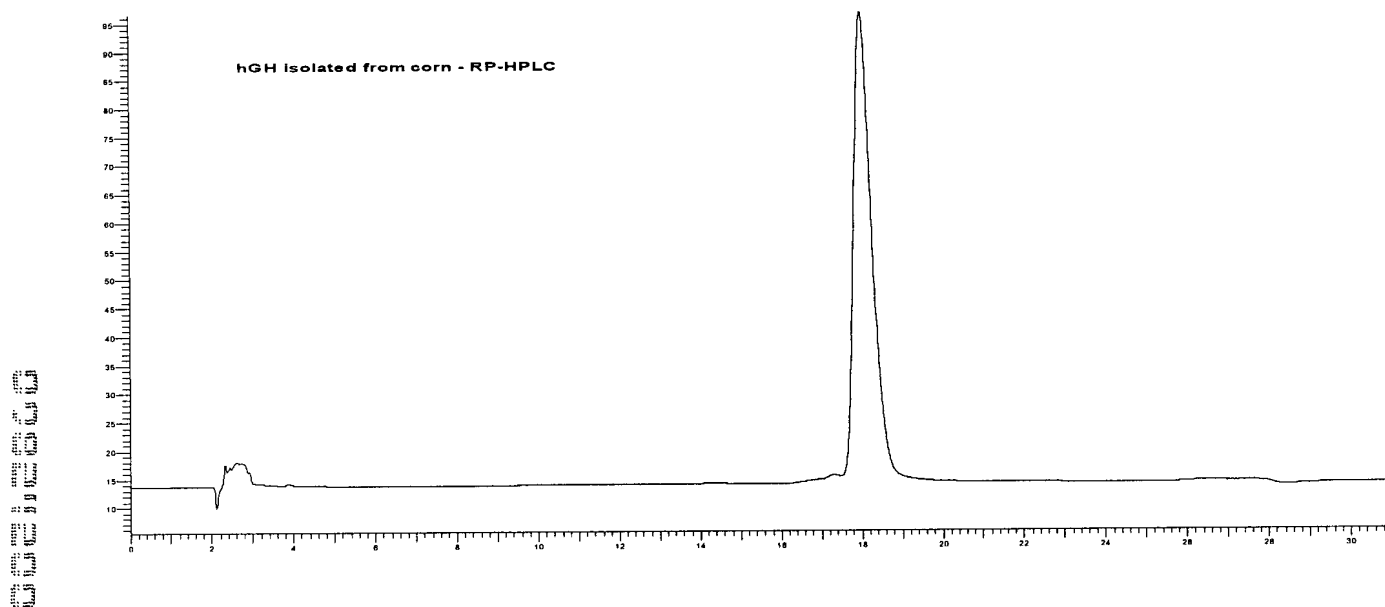


Figure 20A

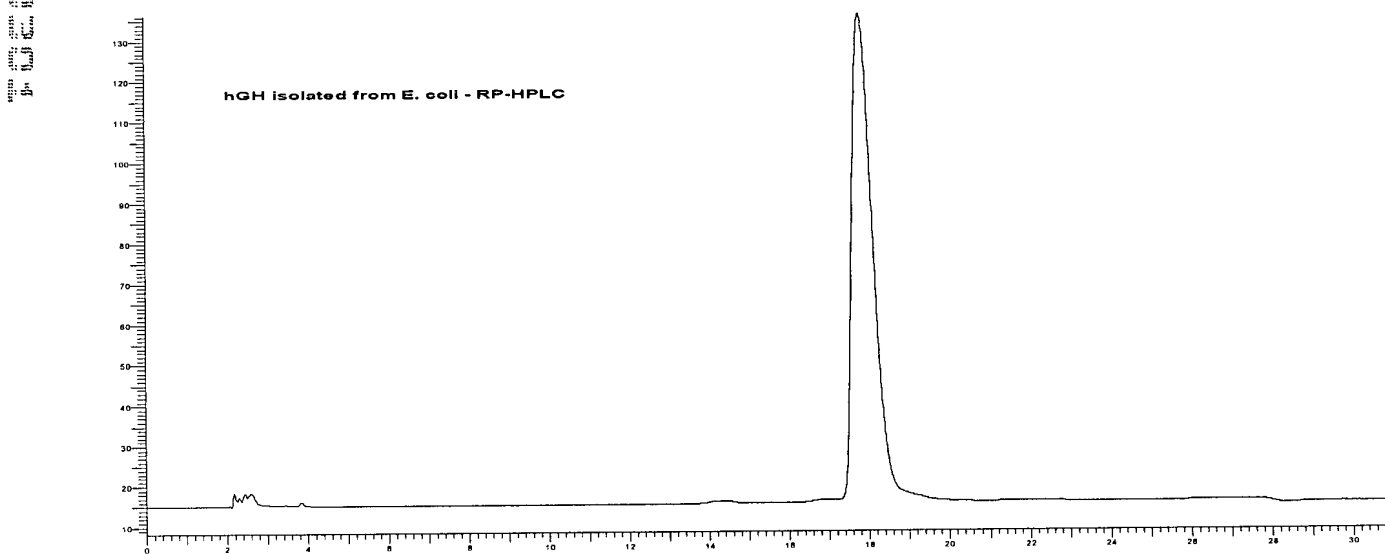


Figure 20B

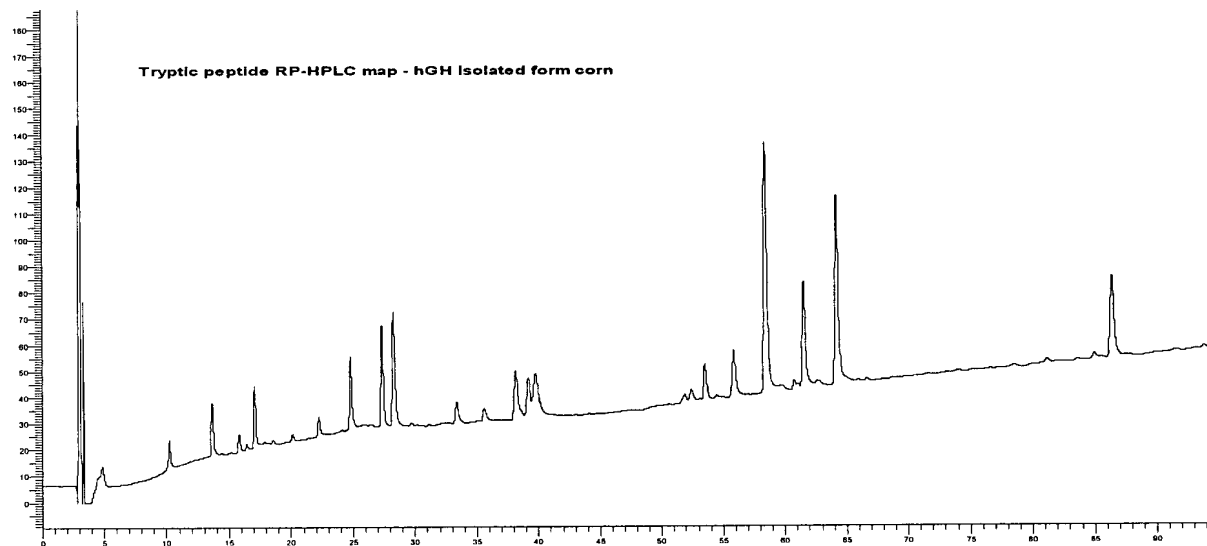


Figure 21A

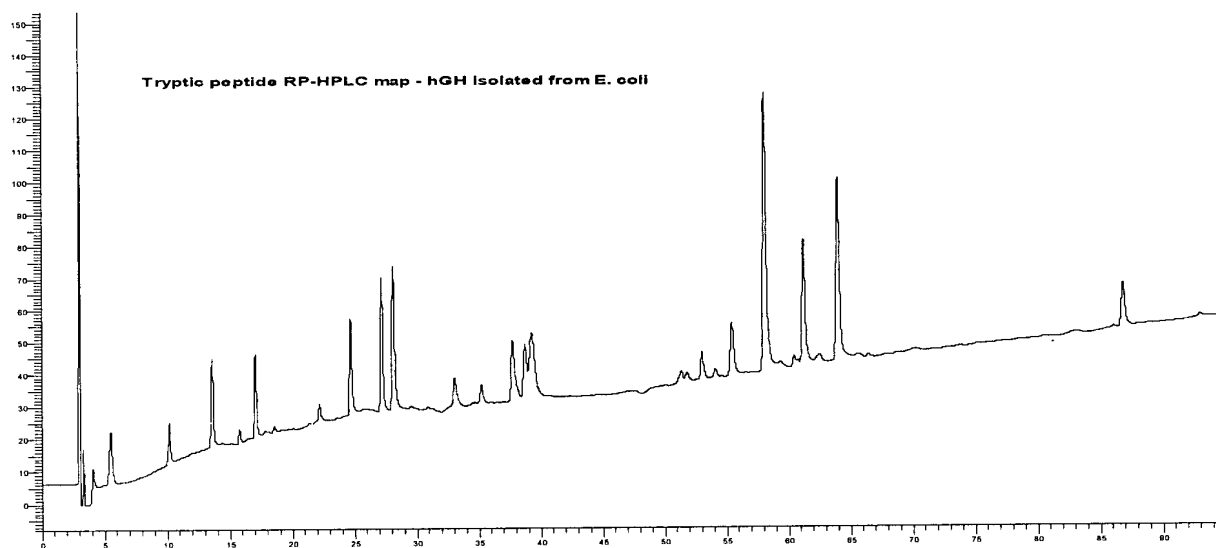


Figure 21B

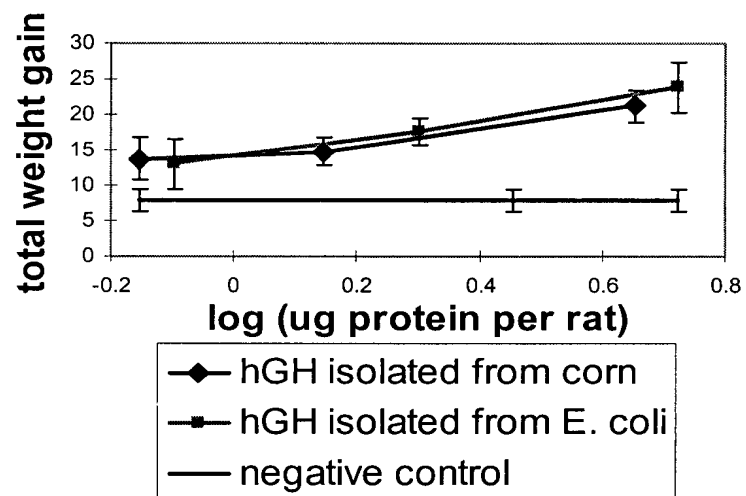


Figure 22

plasmid pwrg	promoter	UTR	intron	signal	coding region	terminator	selection
4740	35S	EXT	-	EXT	mat	NOS	
4743	35S	EXT	-	EXT	mat	NOS	kanamycin
4746	35S	DSSU	-	-	mat	NOS	
4749	eFMV	petHSP70	-	CTP2	mat	NOS	
4753	35S	EXT	ZmHSP70	EXT	mat	NOS	
4756	e35S	-	ZmHSP70	-	mat	NOS	
4759	e35S	-	ZmHSP70	CTP2	mat	NOS	
4763	35S	EXT	-	EXT	gpp	NOS	
4764	35S	EXT	-	EXT	gmt	NOS	
4765	35S	EXT-Cla1	-	EXT	gpp	NOS	
4766	35S	EXT-Cla1	-	EXT	gmt	NOS	
4767	35S	EXT	ZmHSP70	EXT	gpp	NOS	
4768	35S	EXT	ZmHSP70	EXT	gmt	NOS	
4769	35S	EXT	-	EXT	gpp	NOS	kanamycin
4770	35S	EXT	-	EXT	gmt	NOS	kanamycin
4810	35S	EXT	-	EXT	gmt- KDEL	NOS	
4816	35S	EXT	-	EXT	gmt- KDEL	NOS	kanamycin

Figure 23

soy hypocotyls    corn leaves  
N SP cyto    N SP cyto CTP 2 20 ng



Figure 24

--    GMT    Cla-  
GMT    GPP    MAT    10  
ng

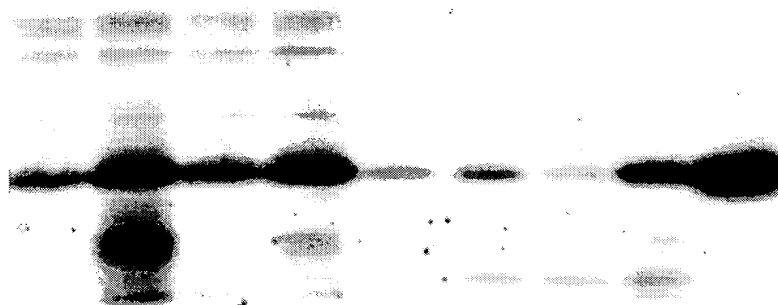


Figure 25

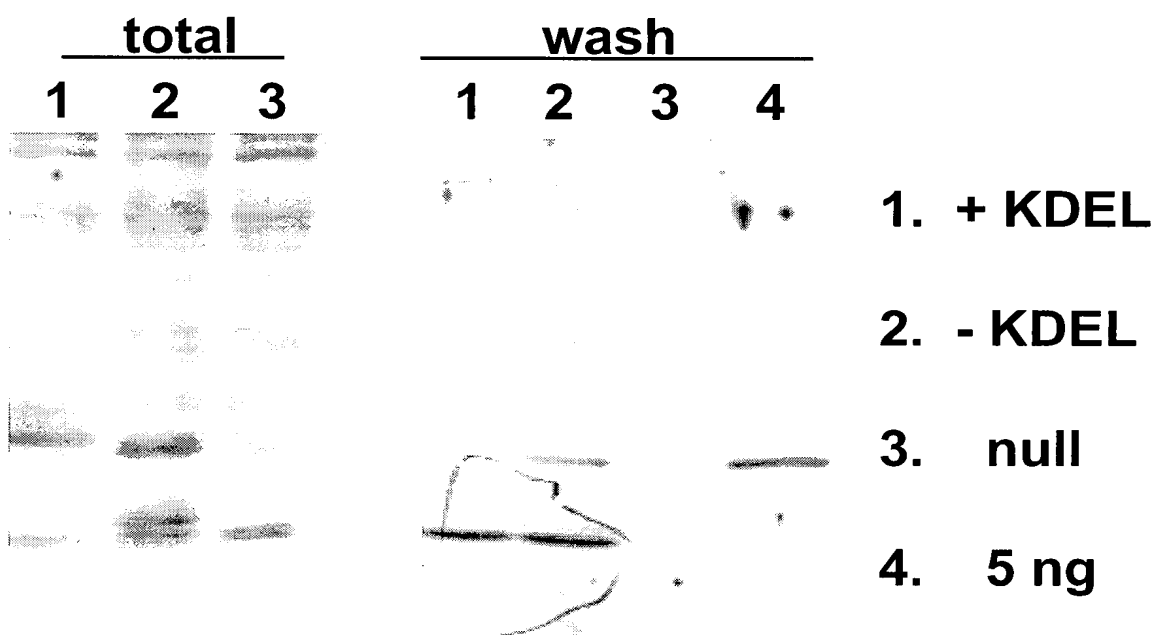


Figure 26

Plasmid pWRG	Target	coding	N-terminus	#pos/ # tested	max cell %tsp	max mg/L
4746	cytosol	initial	MetAlaThr	<50%	<<0.04	0
4749	plastid	initial	MetAlaThr	0%	0.0	0
4740, 4743	secrete	initial	MetAlaThr	70%	0.04	<5
4770	secrete	gmt	MetThrPro	76%	0.04	<3
4769	secrete	gpp	MetThrPro	73%	0.02	<1.6
4816	secrete	gmt- KDEL	MetThrPro	90%	not tested	0
4826	secrete	nsi	MetThrPro	78%	not tested	not tested

Figure 27

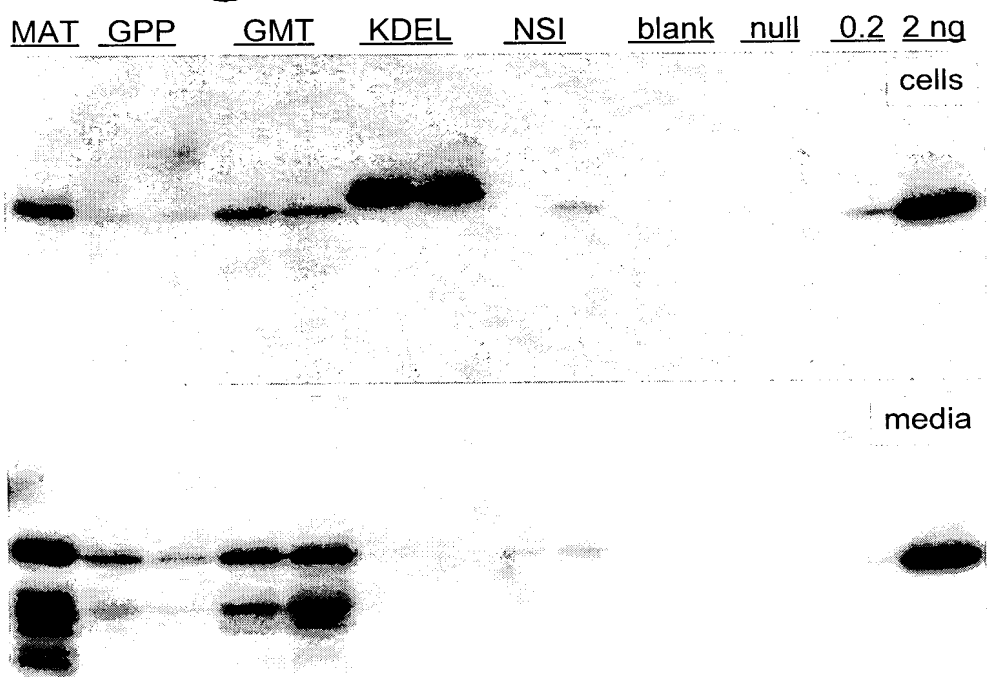


Figure 28

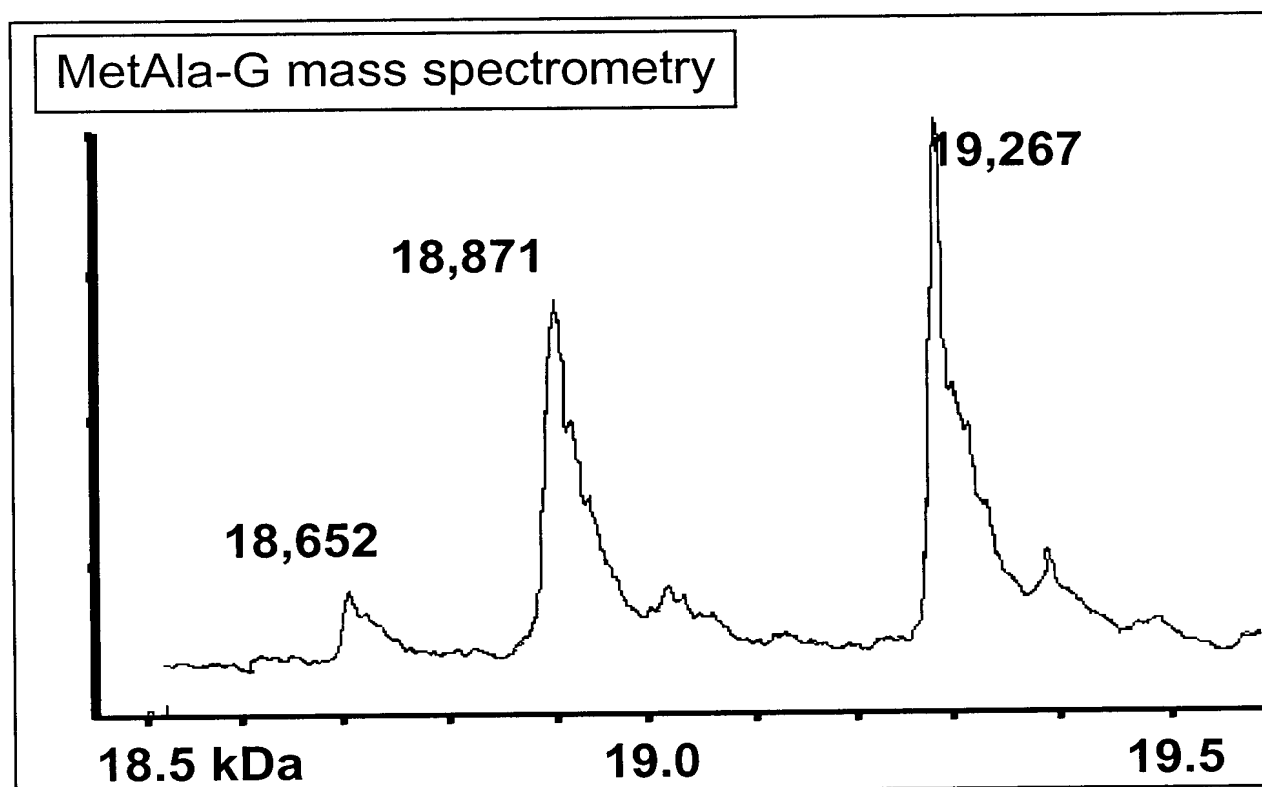


Figure 29



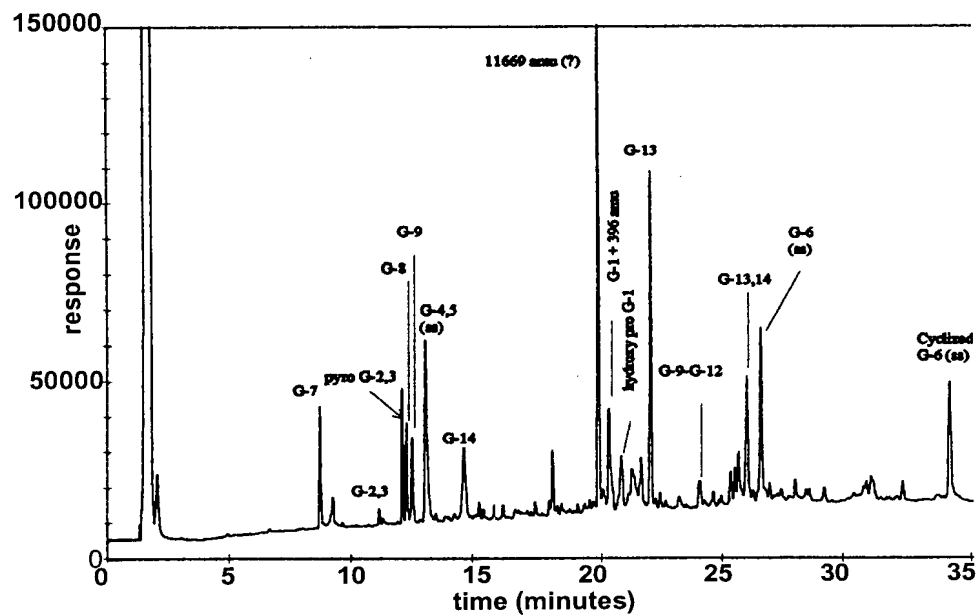


Figure 30

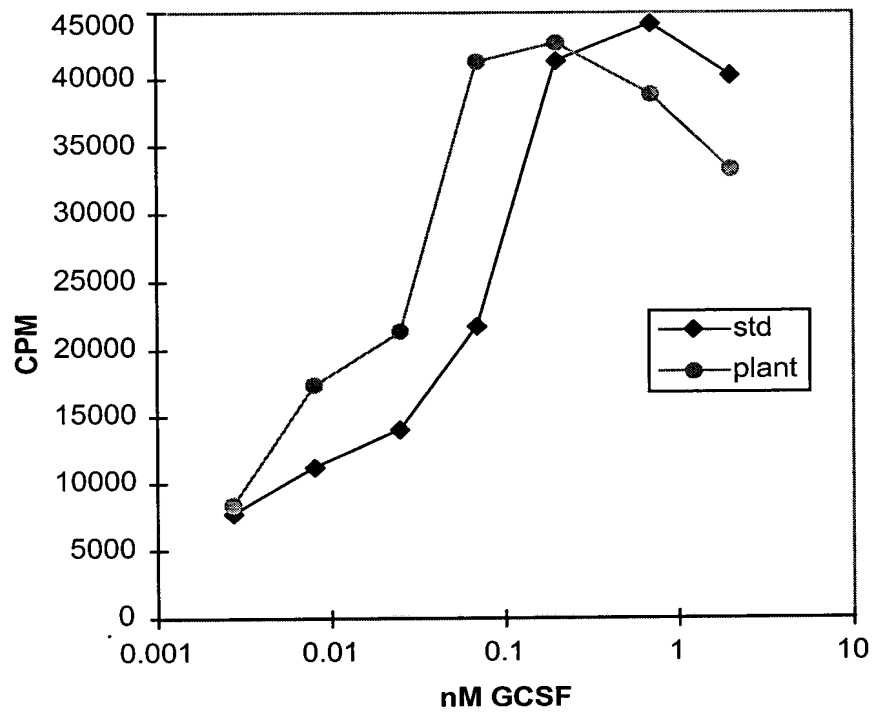


Figure 31